

# LASCA LEAVES



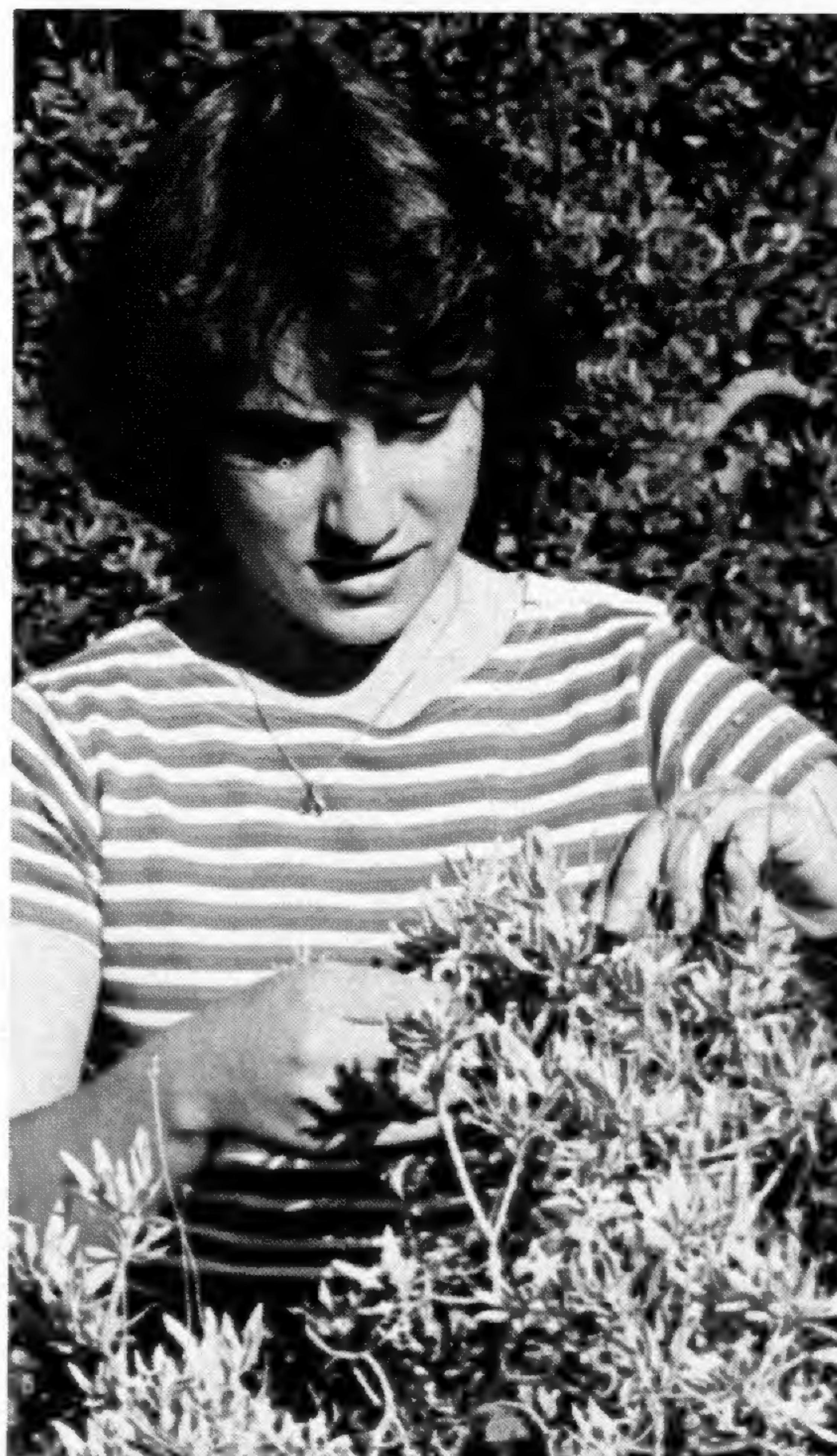
## Los Angeles County Department of Arboreta and Botanic Gardens

### INTERNATIONAL GUAYULE CONFERENCE

THE THIRD International Conference on Guayule April 27 through May 1 will bring scientists and specialists from all over the world to southern California for an exchange of knowledge about this "new" source of rubber.

Research on guayule has been accelerating at such a rapid rate that conference organizers, Drs. George Hanson, Indira Mehta, and Himayat H. Naqvi from the Arboretum Research Division, have had to keep plans for the conference quite flexible. Registration may total 100 persons or, as happened at a recent jojoba oil conference, five times the expected number may attend. So far, guayule specialists from Mexico, Israel, Africa, India, Australia, and the U.S. have shown interest in the conference to be held at the Huntington Sheraton Hotel in Pasadena.

Interest in the silvery-leaved desert shrub has fluctuated widely since the rubber from guayule (*Parthenium argentatum*) was first used by the Aztecs of Mexico more than 1,500 years ago. The rubber tree, (*Hevea brasiliensis*) which yields a latex very similar to that of guayule, was the primary source of rubber until World War II interrupted shipments from Southeast Asia. A brief period



*Karen Toukdarian checks the maturity of flowers for the guayule hybridization project.*

of intense work with guayule in America ended abruptly when hevea and petroleum-based synthetic rubber became available after the war ended. Now, political instability in rubber producing areas and rising petroleum prices have combined with increased demand for natural rubber to draw attention once more to guayule as a source of rubber.

The natural adaptation of guayule to hot regions has made it particularly attractive to nations containing areas of marginal agricultural land with soils too poor or dry for other crops.

Mexico, with its large tracts of dry land covered by native stands of guayule, has pioneered in the practical application of guayule research. The world's only existing guayule latex extraction plant is now operating at Saltillo in the state of Coahuila, Mexico, under the direction of Dr. Enrique Campos Lopez.

Dr. Campos Lopez will be one of the speakers on the opening day of the conference. His countryman, Carlos Vergara Arratia, will also relate his experiences as a member of the Mexican National Commission of Arid Zones.

Other speakers include two University of Arizona, Tucson, staff members: Dr. Kenneth Foster from the Office of Arid Land Studies and Dr. David Rubis of the Department of Plant Sciences. Edward Flynn, publisher of the *Guayule Newsletter*, and Dr. Dan Bragg from Texas A & M are also included in the preliminary list of opening day speakers.

An open forum during the second and third days will give conference participants an opportunity to exchange information. Presentations

will be translated simultaneously into English and Spanish.

On the last day devoted to guayule studies, researchers will be able to get out of the conference rooms and into the field to see what is

happening with guayule in southern California. One of the three planned field trips will feature a visit to the guayule research greenhouses at the Los Angeles State and County Arboretum.

Photos by William Aplin



Different USDA strains of guayule plants grow in separate rows in the test plots near the Depot at the Arboretum.

## FIESTA DE FLORES

**S**OUTH COAST Botanic's 18th annual Fiesta de Flores will be held on the weekend of May 17 and 18, from 9 a.m. to 4 p.m. Plumerias, Mermaid roses, *Platycerium grande* (staghorn ferns) and a cactus and succulent collection will be among the thousands of plants for sale.

Horticultural demonstrations on bonsai, ferns, bromeliads, roses, and herbs are scheduled throughout the weekend. A plant clinic will also be available. A raffle will be held on both Saturday and Sunday with dozens of valuable prizes including a tile mural by Gemma valued at \$1,500, a 19-inch television set, and a greenhouse.

The Gift Shop will be stocked with garden related items, many handcrafted by volunteers from natural materials gathered in the garden.

A preview party for Foundation members and their guests will be held at 6 p.m. May 16. Proceeds from the party and the benefit sale help underwrite further development in the garden.

Cindy Peters, a member of the Foundation's board of trustees, is chairman of the event.

### Arboretum Weather Summary October 1, 1978 to September 30, 1979

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Average maximum temperature	87.1	71	65.9	62.2	78	71	79	81	91	92	90	96
Average minimum temperature	57.2	45.3	39.4	41.6	34	47	49	55	58	61	62	63
Highest temperature	98	90	77	70	78	89	87	102	109	102	100	109
Lowest temperature	50	36	27	27	34	34	43	46	52	53	57	58
Number of clear days	14	17	21	15	17	12	21	15	16	22	12	23
Number of partly cloudy days	5	1	3	1	1	7	7	13	12	18	19	7
Number of cloudy days	12	12	7	15	10	8	3	3	2	0	0	0
Rain each month	.11	1.92	2.95	6.50	3.68	6.23	tr	.03	.04	0	0	.02

Lat. 34 deg. 08' 48" N., Long. 118 deg. 02' 59" W., Elevation 571.28 ft.

## CALIFORNIA CONSERVATION CORPS

FEW EXCHANGES are perfect, but the one between the California Conservation Corps and the Los Angeles Department of Arboreta and Botanic Gardens seems to come close. Since it was first established in 1976, the CCC has sought projects that will help its 18 to 20-year-old members mature and learn as they work to preserve and protect California's natural heritage. These projects concentrate on meaningful, necessary public works such as trail building, park development, wildlife habitat restoration, and erosion control for government and community agencies.

The Department, on the other hand, always has improvements that need to be done but which must be put off indefinitely because em-

ployees are already busy with regular work.

Crews of 12 to 14 young men and women live and work out of the 18 CCC base centers throughout California and usually spend one week at each project before being rotated to a different project. Corpsmembers from the Ft. McArthur center were assigned to an orchard planting project at South Coast Botanic Gardens. In early winter, they cleared the ground and planted apple trees to expand the deciduous fruit orchard. They also planted ground covers and trees in the entrance way frontage along Crenshaw Blvd.

The projects at the Arboretum gave the corps from the San Gabriel Canyon center experience in marketable skills while promoting good work habits and self-discipline. Carpentry skills were emphasized while crews were rebuilding the bridge at

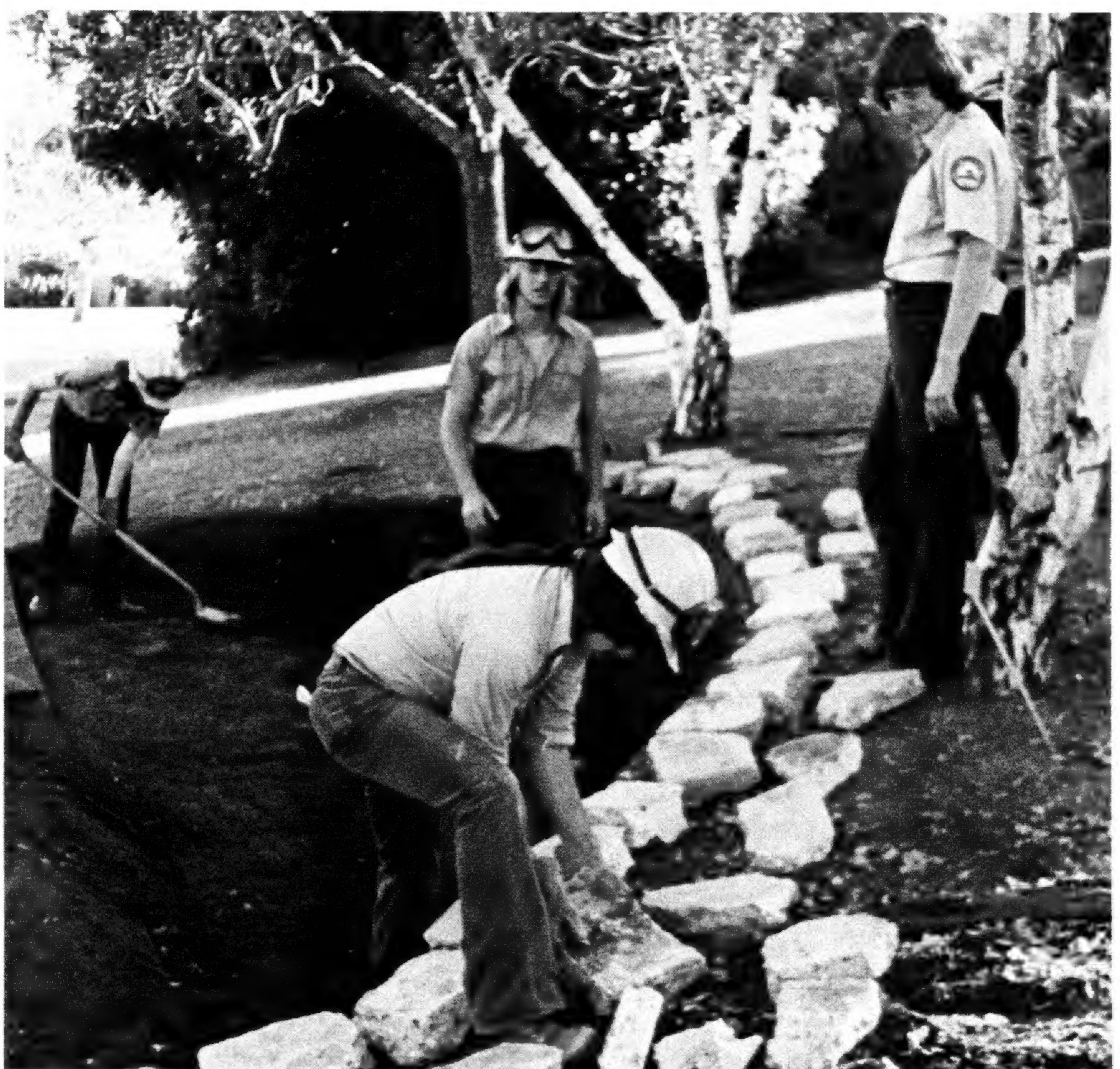
the top of the waterfall and constructing the cedar split rail fences by the Queen Anne Cottage and the Herb Garden.

Building an extension at the western end of the flagstone walk by the Herb Garden interpretive center and recessing a new stone bench into the bank under the birches at the opposite end of the walk gave corpsmembers practice at masonry construction.

One of the basic requirements in conservation is soil stabilization, work that needed to be done in several areas of the Arboretum. The decomposed granite paths in the Meadowbrook area were eroding into the stream, so corpsmembers corrected the grading and resurfaced the paths. The base of Tallac Knoll was the site of two other CCC erosion control projects. Railroad ties were installed on the north slope beside the Herb Garden to hold the



*Installation of new fences was one of several CCC projects.*



*Several successive CCC crews worked at constructing the bench of broken concrete at the base of Tallac Knoll.*

soil and make the path safer for visitors. On the south slope they built a new path that loops around the native oaks and the expanded display of native plants. The area now contains about 75 new plants including several varieties each of native agaves, yuccas, ceanothus, fremontias, and manzanitas.

Planting the slope was a challenge because crews had to learn the proper way to plant and water young shrubs in hillside basins. As the display matures, it will show gardeners a selection of California native plants that are especially well suited for use in home gardens.

Crews from the Simi Valley center are scheduled to make several improvements at Descanso Gardens. The first major project will be the removal of poison oak from an area near the native plant garden to accommodate the plants already waiting in the growing area for transplantation. Corpsmembers will also plant redwoods in a different part of the gardens. Frequent washouts in a canyon area prompted plans for a stone wall that crews will build to stabilize the soil there.

By the time the exchange between the Department and the CCC has

been completed, many improvements at all the gardens will be apparent to visitors. Less obvious but just as important are the intangible

benefits the young corpsmembers will have gained from their demanding and essential work for the Department.

Photos by William Aplin



*After the mortar in the flagstone path by the Herb Garden hardened, CCC members began removing the temporary header boards.*

## Baldwin Bonanza Ten

Sunday May 4, 1980

Preview Party for California Arboretum

Foundation Members and their Guests

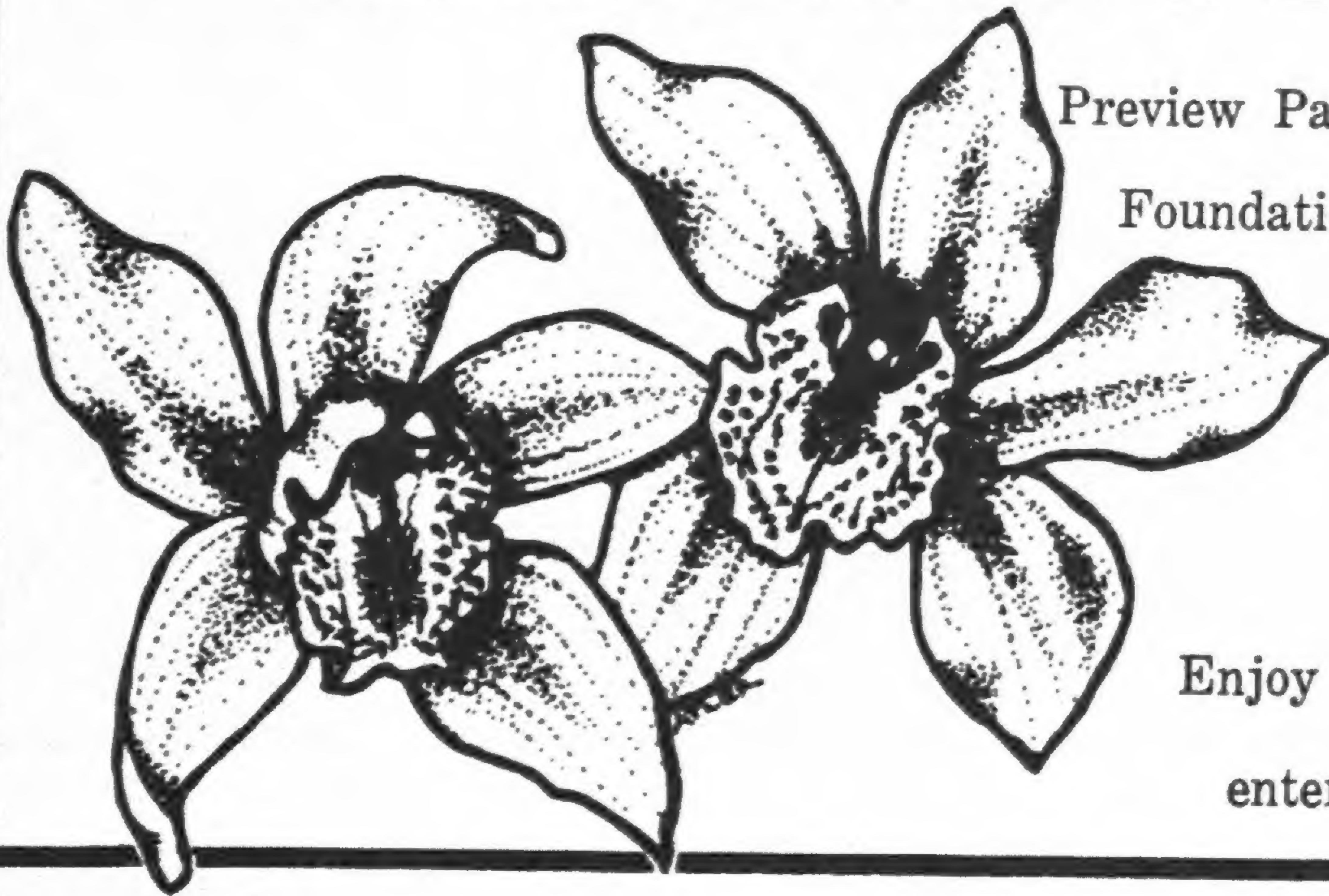
Reserve the date:

Saturday May 3, 1980

5:30 - 8:00 p.m.

Enjoy the best selection of plants

entertainment and refreshments.



By Leonid Enari

# Date Palm: Sacred Tree of Islam



"**A**ND THEY CAME to Elim, where were twelve wells of water, and threescore and ten palms, and they encamped there by the waters." Elim was one of the oases where the Israelites made camp during their flight from Egypt across the Sinai to the Promised Land, and the 70 palm trees mentioned in the book of Exodus, 15:27, were date palms.

During Biblical times the date palm was common throughout Egypt and the Levant, including the present day Israel. "Phoenicia," the name by which part of the Levant, particularly the portion including Tyre and Sidon, was known to the Romans and Greeks, means "land of palms." Some of the ancient coins of Tyre and Sidon bear the image of the date palm, as does a Jewish coin issued at the time of Judas Maccabeus, about 175 B.C. To commemorate the conquest of the Jews and the destruction of Jerusalem by Titus in 70 A.D., the Roman emperor Vespasian issued a coin showing a weeping woman sitting beneath a palm tree.

Flavius Josephus, Jewish historian and general, reported that during his time (first century A.D.) there were still groves of date palms near Jericho, around the lake of Galilee, on the Mount of Olives, and about Jerusalem. These first century plantings now, of course, are gone and drifting sand has covered every trace of their existence. Date palms seen today in the new Jewish settlements in Israel are reintroductions

by experimenting horticulturists.

In passing, it may be said here that the Hebrew word for the date palm is "tamar." It became the Jewish symbol of grace and elegance and was often bestowed by them on women, as, for instance, the sister of Absalom, in allusion to their graceful, upright carriage. Even today, in Israel and other countries "Ta-

mar," "Tamara," and "Tamarah" are often used as girls' names.

Where the date palm, botanically *Phoenix dactylifera* L., originated is not known. Although widely cultivated, no truly wild plant has ever been found. Its progenitor is believed to be *Phoenix reclinata* Jacq. from tropical Africa, *Phoenix sylvestris* (L.) Roxb. from India, or a



A date palm grows on Tallac Knoll. The climate in this area is not hot or dry enough for fruit production.

William Aplin

hybrid between these two. Both these species have palatable, although inferior fruits. *Phoenix sylvestris* is also used in its native country as the source of palm sugar.

One of the legends on the subject claims that the date palm originated from the hair of Adam in the Garden of Eden. The legend tells us that Adam cut his hair with an instrument miraculously provided and buried the cuttings in the ground. Immediately, there sprung from the

spot a palm tree, fully grown and bearing ripe dates. In admiration Adam fell on his face and was then told by the Angel Gabriel, "You are created of the same clay as this tree which shall nourish you." When Adam tried the new fruit, he found it to be nourishing, as the angel had said.

The legend can be challenged by those who believe, and there are many who do, that the date palm and not the apple tree was the tree

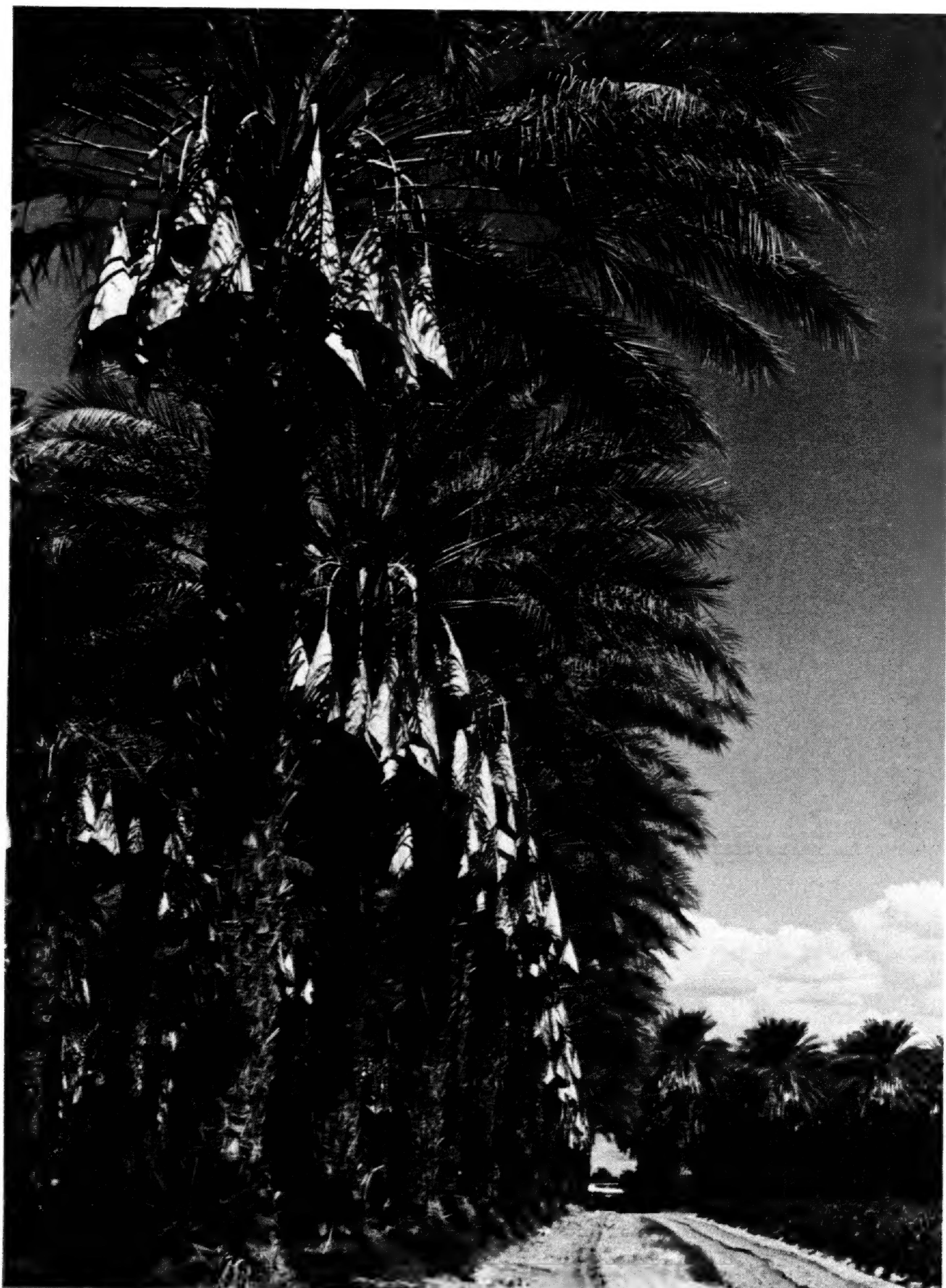
of knowledge of good and evil, and that the date and not the apple was the fruit Eve so generously offered to Adam in the Garden of Eden. If the date palm was the tree of knowledge, Gabriel would have not suggested to Adam that he taste and eat the dates.

The Arabs have a saying that the date palm tree has as many uses as there are days in the year, and they may be right. Its fruit is the chief article of food for innumerable desert tribes in Arabia and North Africa. Its seeds when soaked in water are used as food for camels, cows, and sheep. Its wood is used as building material and fuel. Its leaves are woven into mats, baskets, and even dishes. And to make life more enjoyable and tolerable to man, the tree also supplies nonalcoholic and alcoholic beverages including nabidh, lacqmi and araq.

Nabidh is a nonalcoholic beverage made by pouring water on macerated dates and letting it stand overnight. It seems to be popular in Arabia and Egypt but not in other date growing areas.

Lacqmi is a wine made from the tapped sap of the date palm. A V-shaped incision is made in the terminal bud and an earthenware jar fastened under it. Up to four or five quarts of sap will be produced during a 24 hour period, and the flow will continue for three months or so. The sap closely resembles coconut milk in flavor but is a little sweeter. It quickly begins to ferment, and if it is allowed to stand in the sun for a day or two, a quart is sufficient to start several fights. The tapped tree will, however, produce no fruit for several years afterward, but if it is allowed to recuperate it can be tapped again. The second tapping usually kills the tree, although it may survive a half-a-dozen tappings.

Araq is a strong alcoholic drink usually made from dates and grapes in equal parts. The fruit is allowed to ferment in water and then doubly



Date palms in the Coachella Valley — To protect the dates from rain, kraft paper is wrapped around the clusters. The lower end of the bunch is left open to allow free air circulation about the fruit.

distilled. Sugar and aromatics are added. Wormy dates are reported to yield 20% more alcohol than fresh ones. The effects on those who drink it are said to be practically the same of those of absinth.

Although the Muslim religion prohibits the manufacture and use of intoxicating drinks, this law has never been strictly observed. Also, some law-abiding Arabs have found ways to circumvent it. They obtain the sap of the date palm and drink it when it begins to ferment, easing their consciences by refusing to recognize that such a process is taking place.

To Arabs, however, the date palm is something more than a tree which furnishes food, drink, and other products. To them it is a sacred institution identified with the Semitic race since the dawn of history. Prophet Muhammad himself is credited with having told his followers, "Honor your uncle, the palm. I call it your uncle because it was created from the clay left over after the creation of man. Does it not resemble man by its erect position, by its separation of two sexes, and by its necessity for the pollination of the female? If its head is cut off, it dies; if its heart is exposed to too great strain, it perishes. Is it not the same with man? If its leaves are cut off, it cannot grow others in the same place no more than if the man loses his hands or legs. Honor it, it is your uncle."

The date palm is dioecious, meaning staminate (male) and pistillate (female) flowers are produced in clusters on separate trees in the axils of leaves of the previous year's growth. Each flower cluster or inflorescence is enclosed before maturity in a protective sheath or spathe. Flowers are pollinated by wind, but, as this often does not result in good crops, artificial pollination is practiced by the growers. The most common method of artificial pollination is to cut the strands

of male flowers from a freshly opened male inflorescence and invert two or three of them between the strands of the female flowers during the first two or three days after it has opened. The pollen of one male palm is sufficient for about 50 to 100 female palms. Essentially it is the same method of pollination used by the ancient growers in Mesopotamia (present day Iraq) 5,000 years ago.

About three months after pollination, two of the three fruits produced by each fertilized flower fall off, leaving only one to ripen. At this time also, some of the clusters of fruit should be removed from the trees. About 10 to 12 clusters are usually allowed to remain on a mature tree. Thinning is necessary to secure larger and higher quality fruits. The period of ripening varies from June to October, according to variety and locality. A yearly yield of 100 to 200 pounds of dates from a tree is considered very good



*Artificial pollination — The strands of male flowers are being inverted between the strands of the female flowers.*

by the growers, although some trees produce more.

Arabs distinguish four stages in the ripening of the fruit, namely kimri, khalal, rutab and tamar. In the first stage the fruit grows most rapidly and is distinguished by its green color. In the second or khalal stage it has about reached its maximum size and the green is replaced by a shade of red or yellow. In the rutab stage the tip of the fruit begins to soften and the color of the fruit turns amber or brown. In the tamar stage, the fruit has fully ripened. Arabs eat large quantities of dates in the khalal stage. However, most varieties in this stage are too astringent for Western palates.

Varieties of dates are generally divided into three groups according to whether the flesh of the fruit as it ripens is soft, semidry, or dry. These divisions are somewhat arbitrary, but the classification is convenient and widely used. Soft varieties contain glucose and fructose when fully ripe and little or no sucrose. The semidry and dry varieties, on the other hand, are rich in sucrose. The first group varieties are known by the "date men" as invert sugar dates and those of the second group as cane sugar dates. Invert sugar dates remain soft at a lower moisture content than do cane sugar dates. The latter may become objectionably hard after several months unless the humidity in storage is controlled.

Dates are rich in potassium, iron and other minerals and contain small amounts of Vitamins A, B1 and B2, and nicotinic acid also known as the antipellagra vitamin. According to *The Handbook of the Nutritional Contents of Foods* published by the United States Department of Agriculture, there are 1,081 calories of food energy in a pound of domestic dry dates with pits and 1,243 calories in a pound of domestic dry dates without pits.

For proper maturing, the date re-

quires prolonged summer heat without rain or humidity during the ripening period. At Indio in the Coachella Valley, considered one of the best date growing areas in California if not in all of the United States, the temperatures in summer frequently exceed 110°F and rains are practically unknown.

The world's leading producers of dates are Egypt and Iraq, followed by Saudi Arabia, Iran, Algeria, Pakistan, and Morocco. In the United States, dates are grown commercially in California where the Coachella Valley in Riverside County is the backbone of the industry. In 1974, 4,503 acres of dates were planted in this area. The Bard district of Imperial County with its 389 acres in 1974 is a poor second. Prior to World War II, some dates were planted also in the warmer areas of Arizona, particularly in the Salt River Valley.

These plantings, however, had to be abandoned because of repeated losses from summer rainfall.

The date was introduced into California by the early Spanish missionaries who planted date seeds around many of their missions. A few of these original palms or their offshoot survivors dating back to plantings in the late 18th or early 19th century are still found in southern California. However, the climate of the coast, where most of the early missions were located, is not favorable for fruit production. It was not until the United States Department of Agriculture began importing offshoots of good varieties from Algeria, Iraq, and Egypt between 1911 and 1922 and planting them experimentally in Indio and other hot inland spots in California and Arizona that the growers began to see commercial possibilities.

At present, all or nearly all varieties in commercial plantings in California are offshoots of imported varieties, and they still carry their original names such as Barhee, Dairi, Deglet Noor, Halawy, Khadrawy, Nedjool, Thoory, and Zhaidi. Deglet Noor, a semidry date from Algeria, is the leading variety. In the Coachella Valley in 1977 it accounted for about 85% of the total date acreage. Its fruit is medium to large, and is coral red in the khalal stage becoming amber on ripening and brown when cured.

At the Los Angeles State and County Arboretum the date palm trees can be seen in quadrats K/7, 0/5, and 0/11.

*Dr. Enari is a senior biologist on the Arboretum staff.*

## LOS ANGELES STATE AND COUNTY ARBORETUM, Arcadia

**MARCH 16 — 10 a.m.**

Sunday Morning Walk\*

Tallac Knoll

Dr. Leonid Enari, biologist

**MARCH 22, 23 — 9 a.m. to 4:30 p.m.**

Flower Show

Girl Scouts of America

**MARCH 23 — 2 p.m.**

Sunday Afternoon Talk\*

"Growing and Using Annual Plants"

Ronald Call, education specialist

**APRIL 5, 6 — Saturday 1 to 4:30 p.m.**

Sunday 9 a.m. to 4:30 p.m.

Aril Show

Aris Society International

**APRIL 12, 13 — 9 a.m. to 4:30 p.m.**

Mame Bonsai Show

Mame Society of Southern California\*\*

**APRIL 19, 20 — 9 a.m. to 4:30 p.m.**

Amaryllis Show

So. Calif. Hemerocallis and

Amaryllis Society

**APRIL 26, 27 — Saturday 1 to 4:30 p.m.**

Sunday 9 a.m. to 4:30 p.m.

Rose Show

Pacific Rose Society\*\*

**MAY 4 — 9 a.m. to 4:30 p.m.**

Baldwin Bonanza, a plant sale\*

**MAY 11 — 2 p.m.**

Sunday Afternoon Talk\*

"Food Plants of California Indians"

Gary Cromwell, biologist

**MAY 18 — 9 a.m. to 4:30 p.m.**

Epiphyllum Show

Epiphyllum Society of America\*\*

**MAY 25, 26 — 9 a.m. to 4:30 p.m.**

Santa Anita Bonsai Show

Santa Anita Bonsai Society\*\*

## CALENDAR

MARCH, APRIL, MAY

**MAY 31, JUNE 1 — 9 a.m. to 4:30 p.m.**

Satsuki Azalea Show

Valley Satsuki Azalea Society\*\*

\*Presented by California Arboretum Foundation

\*\*Co-sponsored by California Arboretum Foundation

## DESCANSO GARDENS, La Canada

**MARCH 1, 2 — Saturday 12 to 4:30 p.m.**

Sunday 9 a.m. to 4:30 p.m.

Camellia Show

So. California Camellia Council\*\*

**MARCH 15, 16 — Sat. 12 to 4:30 p.m.**

Sunday 9 a.m. to 4:30 p.m.

Daffodil Show

So. California Daffodil Society\*\*

**MARCH 29, 30 — 9 a.m. to 4:30 p.m.**

Bonsai Show

Descanso Gardens Bonsai Society\*\*

**APRIL 20 — 2 p.m.**

Sunday Afternoon Talk\*

"Composting"

George Lewis, superintendent

\*Presented by Descanso Gardens Guild

\*\*Co-sponsored by Descanso Gardens Guild

## SOUTH COAST BOTANIC GARDEN, Palos Verdes Peninsula

**MARCH 1, 2 — Saturday 1 to 4:30 p.m.**

Sunday 9 a.m. to 4:30 p.m.

Flower Show

Costa Verde Garden Club\*\*

**MARCH 9 — 2 p.m.**

Building & Decorating Rose Parade Floats\*

Everett Fisch

**MARCH 16 — 2 p.m.**

Talk, "Color In Home and Garden"\*\*

Christina Robeletto and

Rocky Marshall

**MARCH 23 — 10 a.m.**

Sunday Morning Walk\*

Spring Flowering Plants

Edward Hartnagel, assistant superintendent

**MARCH 23 — 2 p.m.**

Talk on Flower Arranging\*

Five Top Flower Arrangers

**APRIL 12, 13 — Saturday 1 to 4 p.m.**

Sunday 11 a.m. to 4 p.m.

Table setting contest\*

Judging and tea

**APRIL 20 — 2 p.m.**

Demonstration on division, cleaning, replanting outdoor orchids\*

Bill Bailey, professional grower

**APRIL 27 — 2 p.m.**

Palos Verdes Symphonic Spring Band Concert\*

**MAY 17, 18 — 9 a.m. to 4 p.m.**

Fiesta de Flores, benefit plant sale\*

\*Presented by South Coast Botanic Garden Foundation

\*\*Co-sponsored by South Coast Botanic Garden Foundation